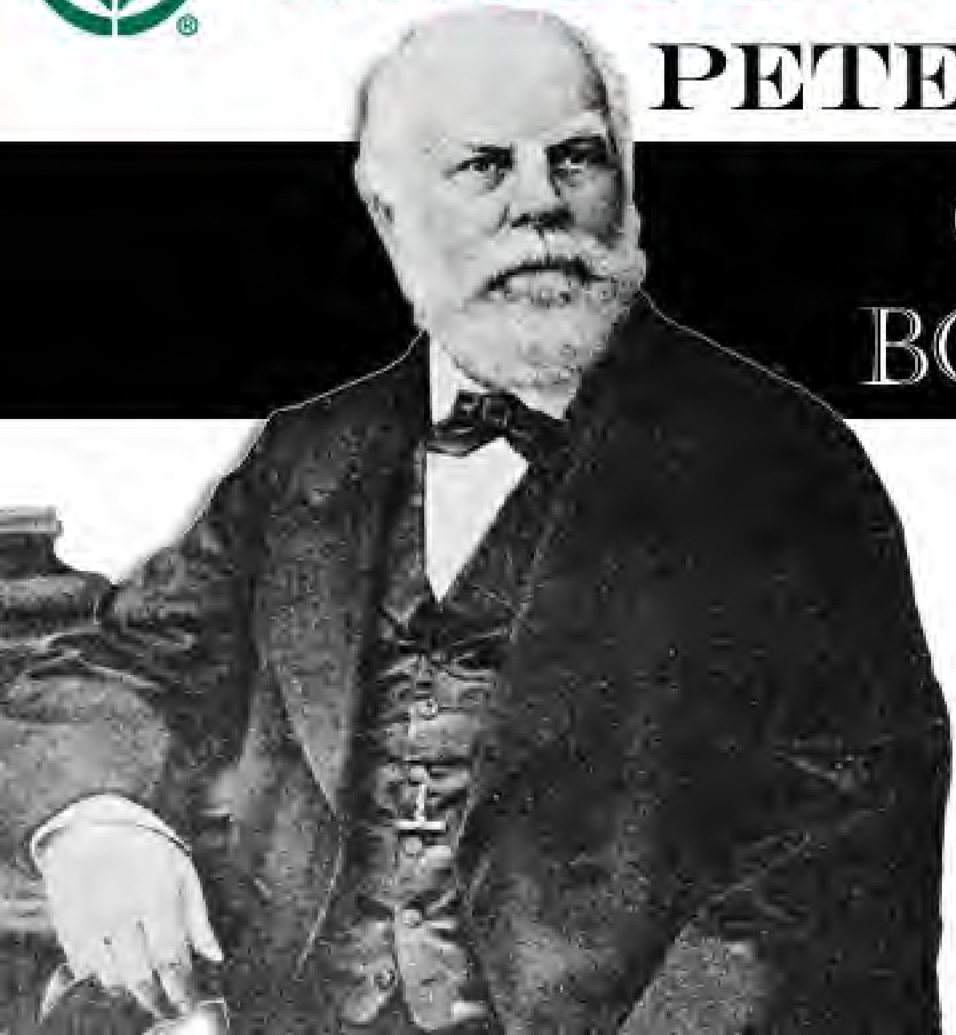

MISSOURI BOTANICAL GARDEN

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GEORGE ENGELMANN BOTANICAL NOTEBOOKS

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Notes on Alismaceae sent to Dr Lapham in Jan 1856 for his Catalogue of Illinois plants.

Alisma Plantago β. Americanum
Echinodorus rostratus E (Alisma r. Nutt
E. radicans E (Alisma Nutt)
E. parvulus E very different from Sagittaria pusilla
Sagittaria variabilis E
α obtusa
β. latifolia
γ diversifolia
δ sagittifolia
ε angustifolia
ζ. linearis (Ohio)
S. heterophylla Pursh
elliptica
rigida
angustifolia
fluitans
S. simplex Pursh.

Echin parvulus with 6 short extr and 3 longer interior stamens and numerous ovaries with sessile style (!) herb Gray, Ravenel in still waters SC

Alisma Kotschyi looks exactly (leaves, long recurved fruitbearing pedicells) like my Sagitt ~~recurvata~~ calycina

Lindheimer Flor Tex 713 (Herb Gray) collected a species in slow streams at New Braunfels, July 47 pedicellis fructiferis recurvis, ~~fere~~ aequilongibus foliis lanceolatis s. ovato lanceolatis
which must be S. simplex maxima

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Sketch of my paper on Alismaceae of U. S. Frankfurt December 1857?

Alisma — in orbem disposita — praefloratio involuta
Echinodorus ~~Rich~~ L. C. Richard in Mem. Mus. I. 365. — subimbricata
Sagittaria — Char. gen. — Engelm in Gray Man. ed I.

S. variabilis E. in Gr. Man. ed I.

S. sagittifolia Lin ex parte — Mich. Pursh ~~Torrey~~ (auct. fl. Am. bor. omnes
S. ~~latifolia~~ -ifolia Willd. Spec. 4. 409. Pursh 2. 396 etc.
S. hastata Pursh 2. ~~396~~.
S. gracilis Pursh 2. 396.
S. pubescens Muhlenb. Cat. ~~86~~.
S. obtusa (dioica) Muhlenb. in Willd Sp. pl. 4. 409.

S. heterophylla Pursh 2. 396
S. rigida Pursh 2. 397

S. lancifolia Lin Amoen 5. 409 & Lin Sp. 1411 (Plum ic. ed Burm t. 116 f. 1. ribbed leaf.
Mich. fl. 2. 189. Rugel. Portsmouth Va
Elliott. Sk 2. 591 differed Sprengel unites Lin & Mich × ~~&~~ Pursh again.
S. falcata Pursh. 2. 397 — copies only Michaux diagn. without having exam. the plant and
S. acutifolia jumps at the conclusion of them being diff.

S. Michauxii n. sp. Lin. ~~Suppl~~ 419 no! see Seubert ? at least the plant coll by Wallschlaegel in Surinam and distributed under this name. No 493 & 1566.
S. graminea Mich ! 2. 190 (= S. natans. Hb. Willd. 17560 ~~Muhlenberg~~ misit ?)
S. acutifolia Pursh. 2. 397. and auct. fl. Am. non Lin
A. subulata Lin Sp. 487 ~~fide~~ Nutt monente (= S. Purshii (Steud. Nom & Kunth ~~Enum~~ III. 160
S. simplex auct. fl. Am. plurimi non Pursh 2. 397. ~~Bl~~ Lind Tex No 182
S. stolonifera Eng & Gray Pl Lindh. No 183
S. pusilla in Hb. Monac. Buckley Pa

S. natans Mich 2. 190. (non Pall. Sibiria) ~~Am~~ auct. fl. Am. omnes

S. ~~fluitans~~ marina
terrestris
S. pusilla Nutt. Gen 2. 213 — A. subulata Willd Sp. pl 2. 279 (& herb. No 7115 Bosc, Virgin
Pursh ~~1~~. 253 ! — Echinodorus subulatus ex parte Engelm.
(S. pusilla in Chapm Fl. Florid is Echinodorus parvulus

S. calycina E. — also Drummond III. 424 Wright. 1849 679
S. graminea Elliott (graminifolia Curtis in hb. ?)

S. bulbosa mihi = trachysepala is a small lancifolia ?? B. Matthes No 278 Texas

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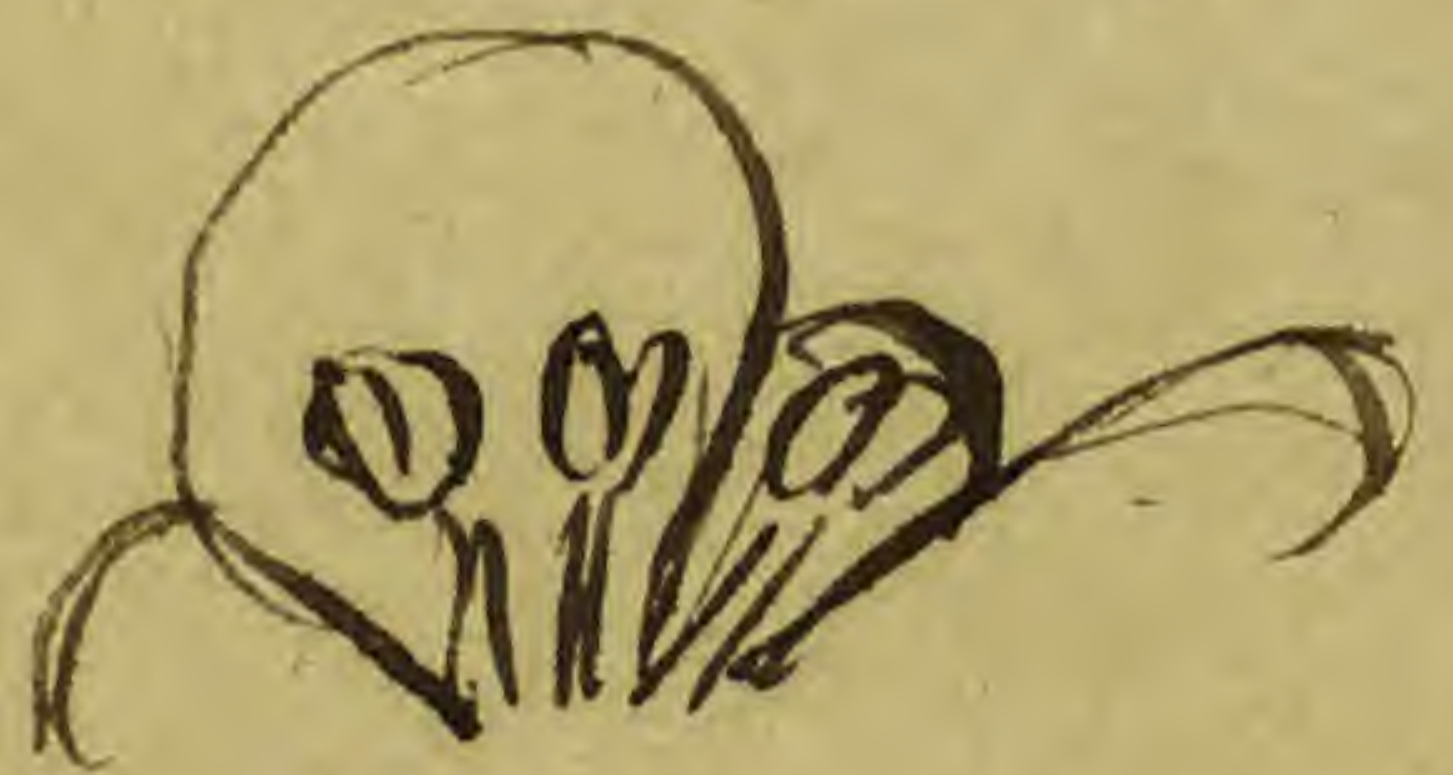
S. graminea   N. Orlean Drumd. 435   see hb Hook
Tex. Lindh. 182 & 183.

6

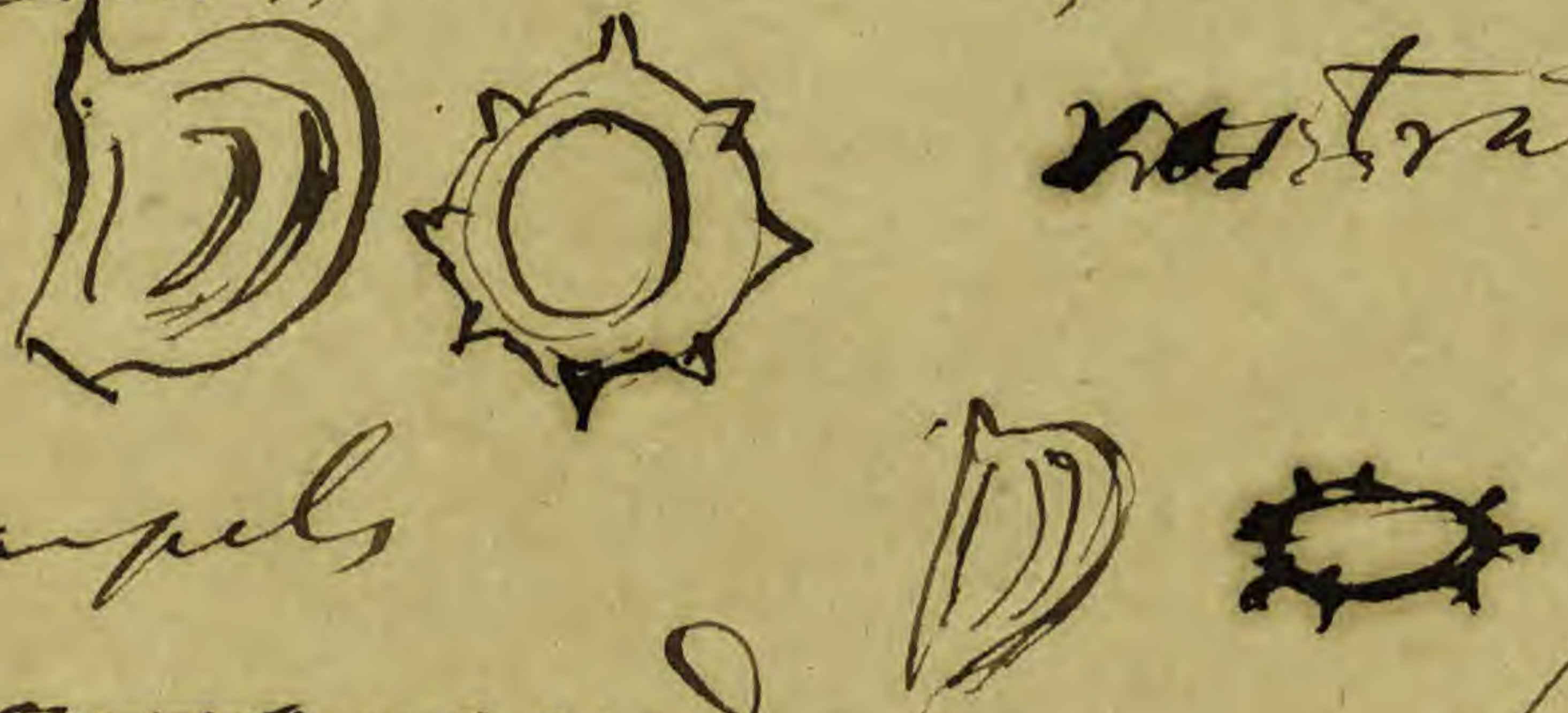
Alisma tenellum Mart is very similar to my Ech. parvulus

if the figure of the former in Fl. Bras is correct it has small ovate-orbicular sepals and large obovate rounded petals and 9 stamens 2 opposite to the petals and 1 opposite to the sepals — just the reverse of E. parvulus, which has also obcordate petals



carpels in the figure in one circle! can this be correct? E. parvulum has certainly capitate carpels

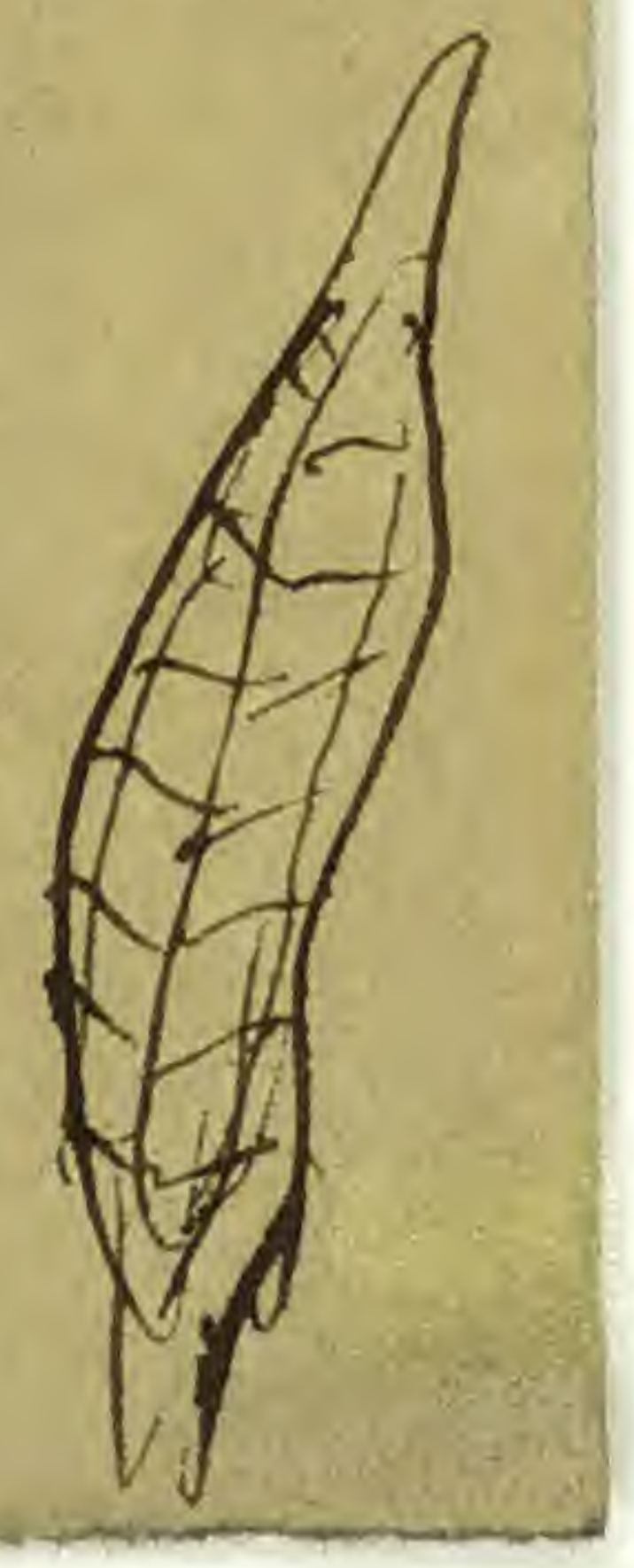
carpels globose,



rostrate

In my plant the carpels are oblong, narrow, compressed.

leaves veined in the figure



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Alismaceae

6 Stamens: in 3 pairs, each pair opposite a sepal (Alisma Plantago; Sag. calycina ♀?)

9 Stamens; 3 pairs as above, and 3 inner circle single ones, opposite the petals (Echinodorus parvulus Sagittaria calycina ♀)

12 Stamens; 3 pairs as above forming the outer circle and and 6 single ones, forming an inner circle, opposite sepals and petals so that alltogether 3 stand before each sepal and 1 before each petal (S. calycina ♀)

12 Stamens; 3 pairs, forming an outer circle, ~~of~~ opposite the 3 petals, 6 single ones as above, so that alltogether 3 stand before each petal and 1 before each sepal. (Ech. rostratus 1845)
This is not analogous to the others and perhaps not correct — the foregoing would probably be right.

15 Stamens: 3 pairs before each sepal, 3 single ones before each petal, these 9 forming an outer circle; 6 single ones, forming an inner circle, before sepals and petals; so that 3 stamens are opposite each sepal and 2 opposite each petal. (S. calycina ♂ small flower)

21 Stamens: 6 pairs before sepals and petals forming an outer circle of 12 stamens; inner circle consisting of 9, of which 3 pairs are opposite petals, and 3 single ones opposite sepals (if drawn correctly!) (Echinodorus radicans)

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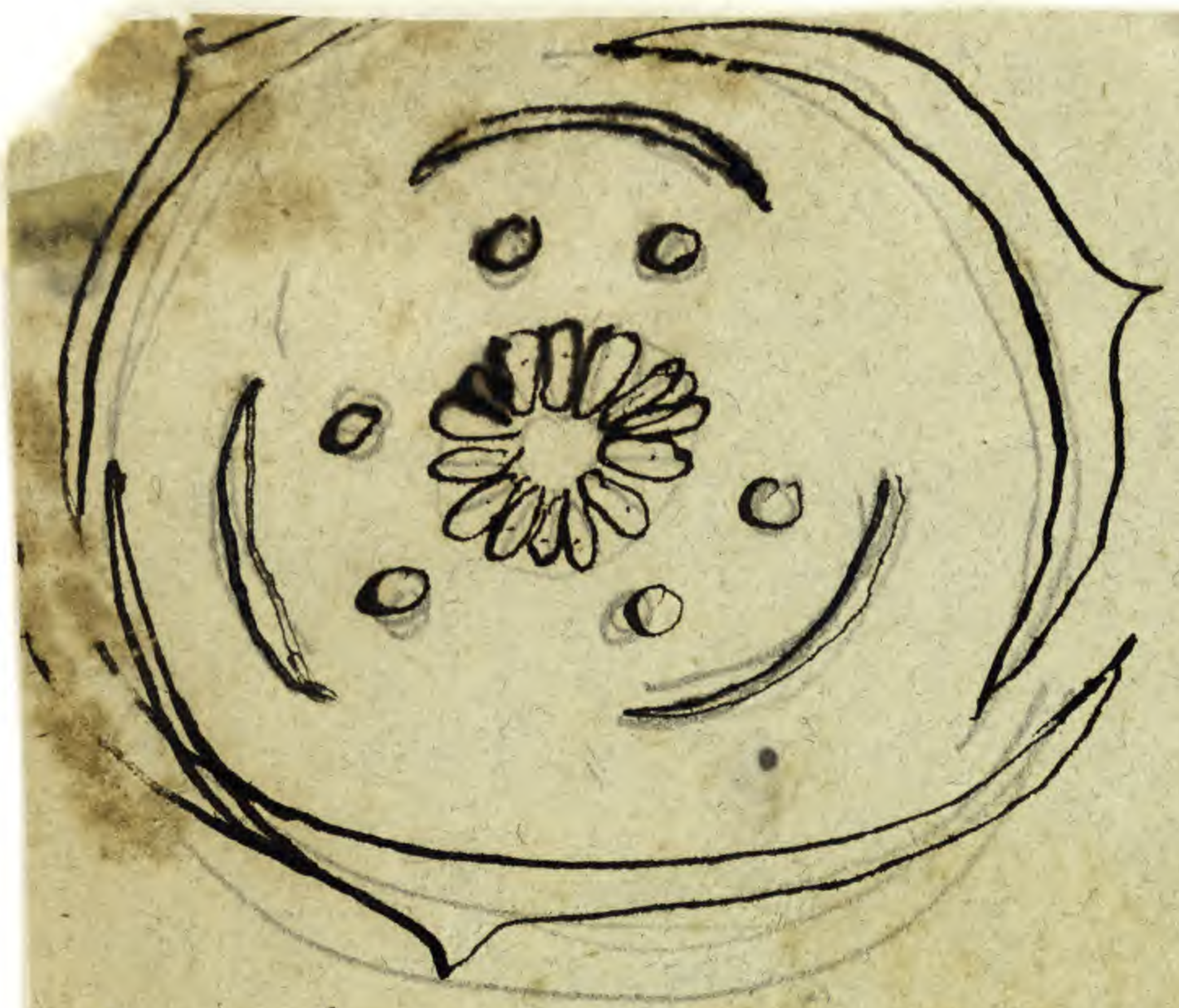
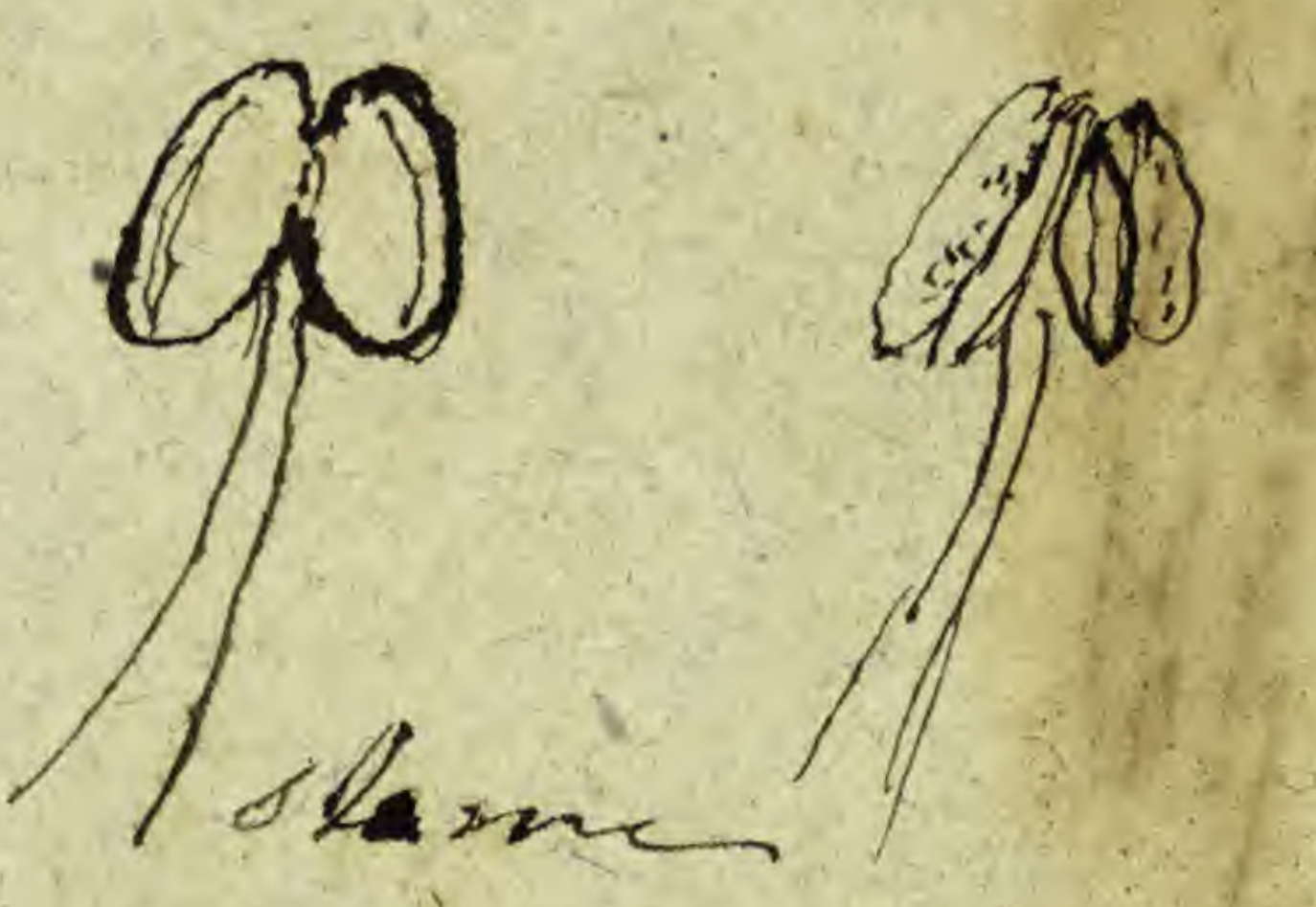


Alisma Plantago 3

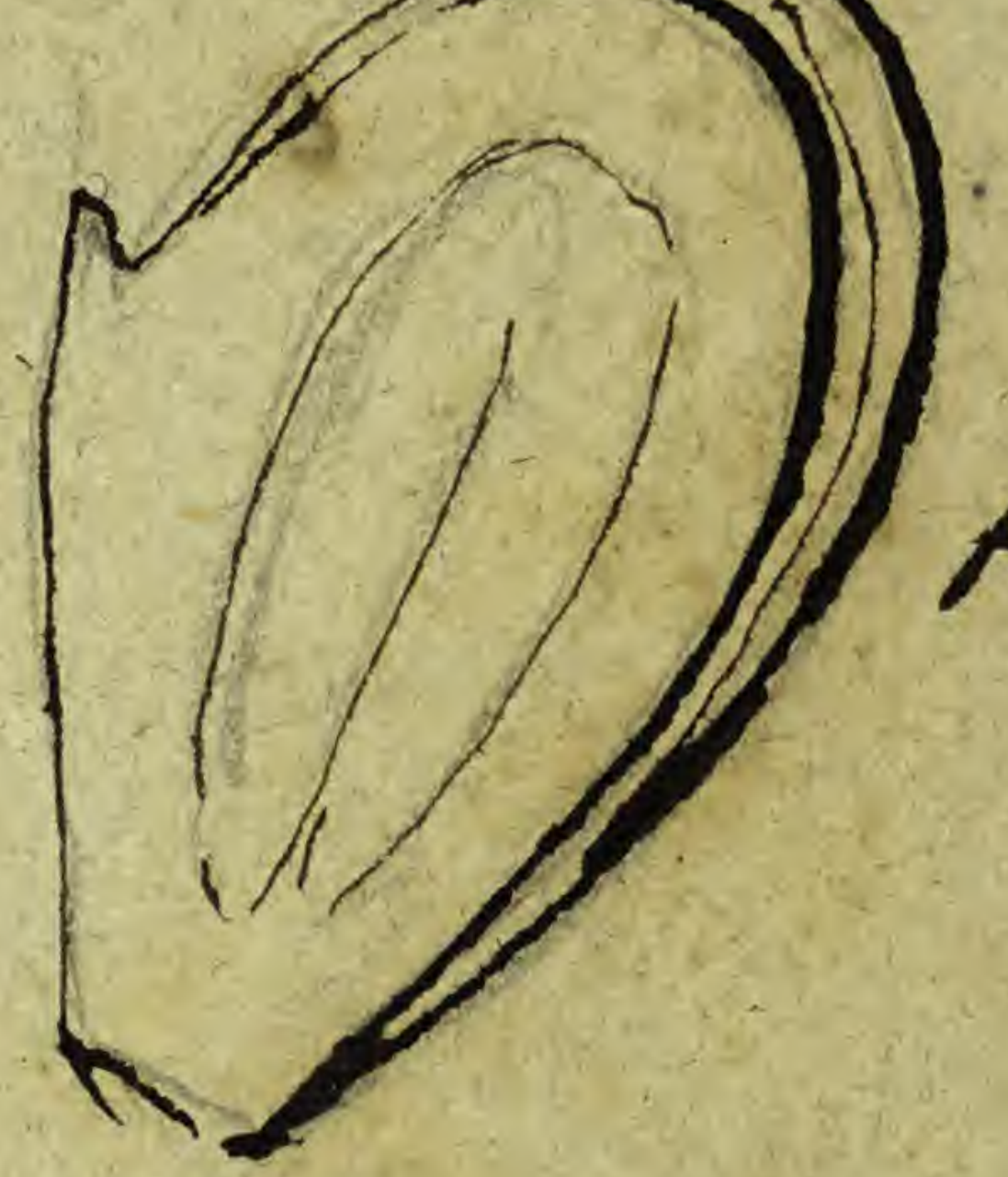
St Louis Sept. 1845



ovaries 12 – 20

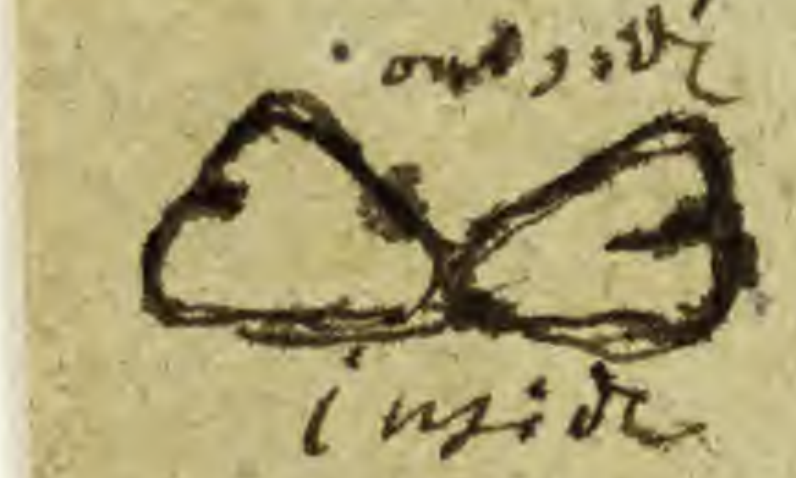
~~anth.~~ sagitt. dorso affix
lateribus aperientes

petala angustiora, apice involuta,
non imbricata

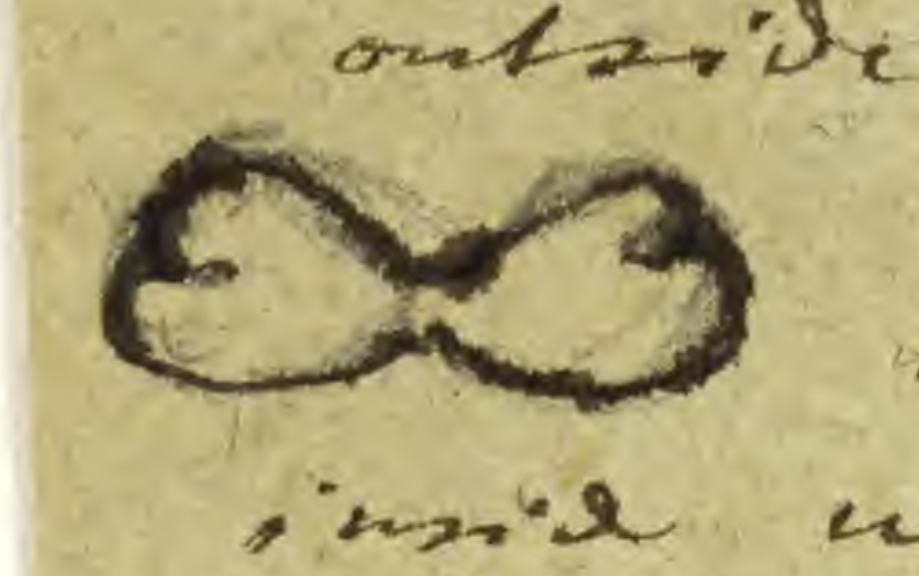


Sept 1846

Section of Anther before opening



which shows that there is
no difference between this
and Helanthium (probably Sagittaria the same



top view of unopened anther Aug 1847

carpell

Oct. 1846
Brief an Braun.

Alisma fl. herm. pet. ~~invol~~. stam defin it, fruct ~~capit~~ vertic
(2 – 3 carinati
dorso dilat.

~~nodorus~~

Echinodorus
Helanthi – fl. herm, pet. imbric. stam defin – indef. fruct.
capitat. costat.

Sagittaria: fl monoec. s. dioec. pet. imbric, stam indef. fruct
capit. dorso alat.

4/12 57

Alisma cal. imbr. coroll. valvate; 6 stam altern with
sepals & petals (not opp to either
thereby indicating
them to be one circle !?

Echinodorus cal & coroll imbricate.
stam. 6 or more ?

(what is position of Stamina in Parnassia.

H.B. Fr 1826

Hungar. Transſylv

10139

Alisma Plantago var pumila Nolte
Holstein has 3 carinate fruit
perhaps = graminifolium Ehrh.

A. arcuatum Michalet (Flore de France
par Grenier & Godron Paris 1855.)
has lanceolate leaves & fruit with
style subterminal, and 3 carinate back.
Common about Avignon and probably
in the whole south of France.

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1. Echinodorus parvulus n. sp. (Helanthium pusillum).
annuus, stoloniferus, foliis submersis linearibus, emersis lineari lanceolatis s. ~~ellipticis~~ ovato lanceolatis, utrinque acutis, penninerviis, ~~floribus umbellatis~~ scapis folia aequantibus, umbellis paucifloris simplicibus, subinde foliosis, decumbentibus radicantibus; ~~floribus longe pedicellatis~~ pedicellis elongatis, fructiferis recurvis, perigonii foliis interioribus ~~longe~~ obcordatis, stam. 9; stylis ovario pluries brevioribus ~~pedicellis fructi~~

Margin of ponds in the hilly country about St Louis, only seen in wet season (August & Sept 1845 ~~abundant 2 4 inches high~~ 1846 it had entirely disappeared!). When overflowed it forms semi transparent linear phyllodia, without any lamina, but generally ~~H~~ the leaves are 6 to 12 lines ~~long and~~ from 1 to 6 lines wide; umbels from 3 to 6 or 8 flowered; pedicels 6 – 20 lines long, flowers about 3 lines in diameter, I have distributed this plant to Correspondents under the name of Helanthium pusillum, not being aware that the Genus Echinodorus would with slight alterations comprise all our species.

2. Echinodorus rostratus (Alisma rostratum Nutt in H6. Torr.)
annuus, foliis late ovatis obtusis, basi ~~late truncatis~~ saepe latissime cordatis s. truncatis; scapo erecto folia ~~superantibus~~, ~~foliis floribus~~ verticillato-paniculato multifloro; perigonii foliis interioribus orbiculatis subacutis, stam. 12, stylis ovario longioribus; carpellis ~~stylo~~ persistente rostratis.

Margin of ponds & lakes in rich alluvial soil about St Louis, and from Illinois to Arkansas ~~Jl.~~ Aug. Sept. — Like the former rare in some and very common in other seasons. — Plant from 4 inches to 2 feet high; — the smallest dwarfy specimens have lanceolate leaves acute at each end; generally leaves 1 to 2½ inch ~~wide~~ and 1½ to 2½ inch ~~[illegible]~~ long.; — flowers

about 5 lines in diameter; proliferous pedicells straight, carpells strongly ribbed, rostrate.

3. Echinodorus radicans n. sp. perennis foliis late ~~ov~~ triangulari-ovatis, obtusis, basi ~~late~~ sinu latissimo cordatis v. truncatis; scapo elongato decumbente radicante (subinde foliifero) v. ramoso, floribus longe pedicellatis, verticillatis stam. ~~12~~ sub-21. stylis ovario multo brevioribus, carpellis numerosissimis, breviter rostratis, dorso carinatis denticulatis

In Lakes, in the bottom lands of the Mississippi near StLouis, and from here to Arkansas & Texas. fl. fr. August to Octob. — I have seen the plant in Hb. Torrey without name or locality. — petioles often 1 to 1½ foot long; leaves ~~2 to 4~~ from ~~two~~ 3 to 4 inches long and nearly as wide to 8 inches ~~wide~~ long & 7 inches ~~long~~ wide Scape often 2 to 4 feet long, ~~laying~~ prostrate over the surface of the water, branching, radicant, producing a profusion of large ~~fine~~ flowers (10 to 15 lines in diameter) and often ~~new~~ bunches of leaves & young plants.+ carpells much more numerous than in the last, but shorter rostrate. —

+ Stamens regularly 21 but often by abortion a few less

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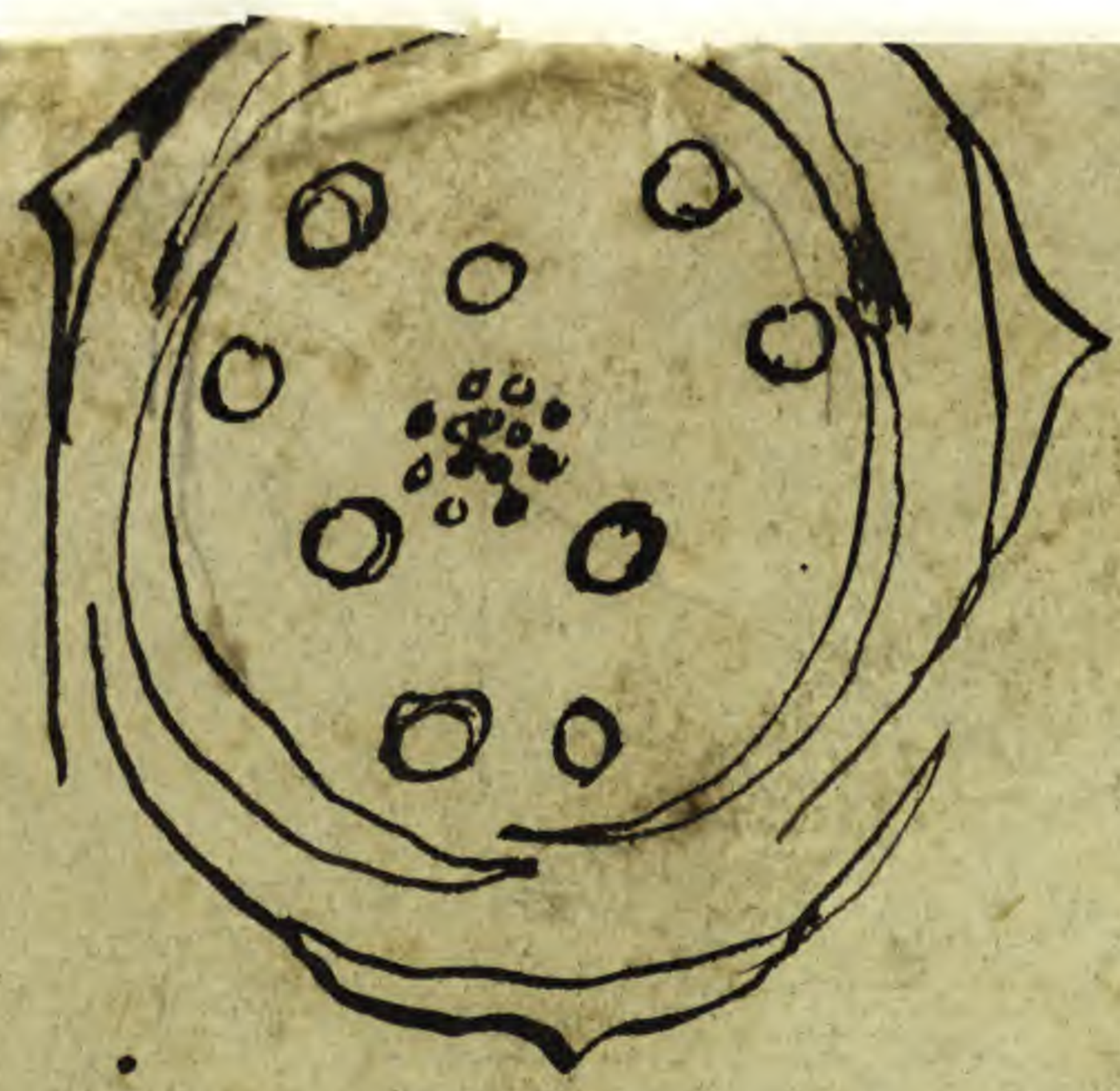
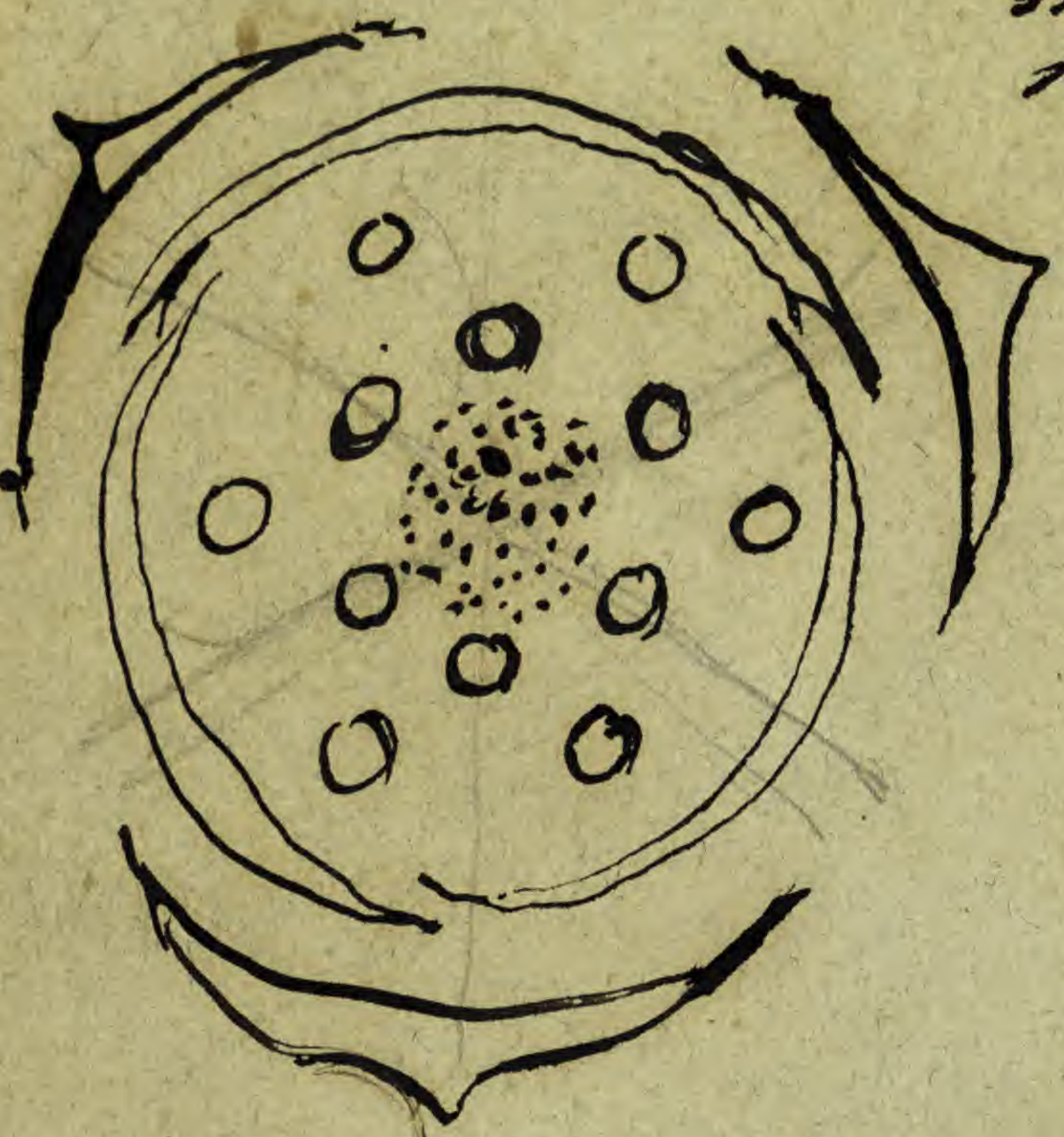


Echin. parvulus
Alisma ~~minus~~

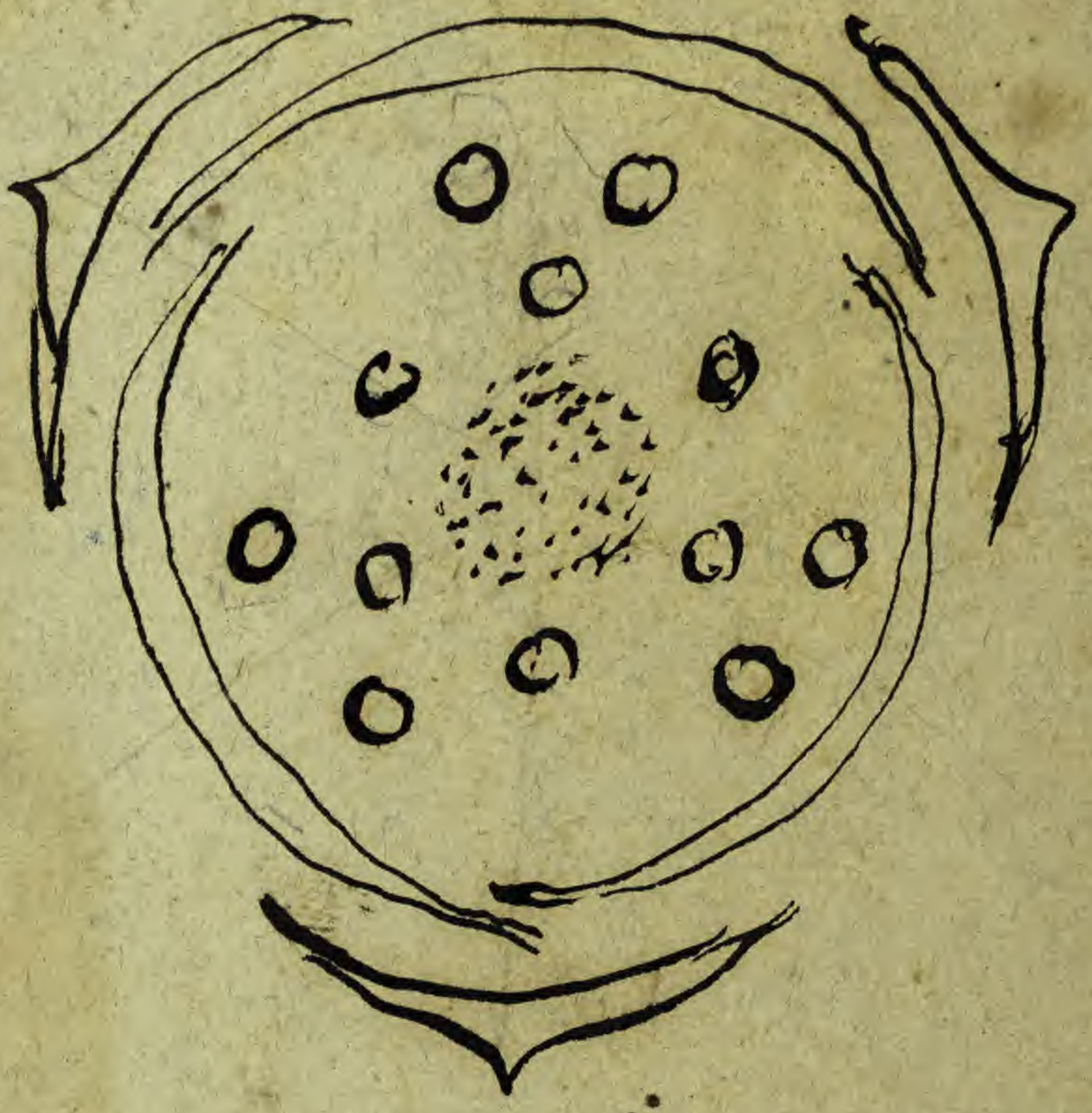
Sept
St Louis 1845

6 outer stamens in pairs
at the base of the petals!
shorter than the inner
stamens

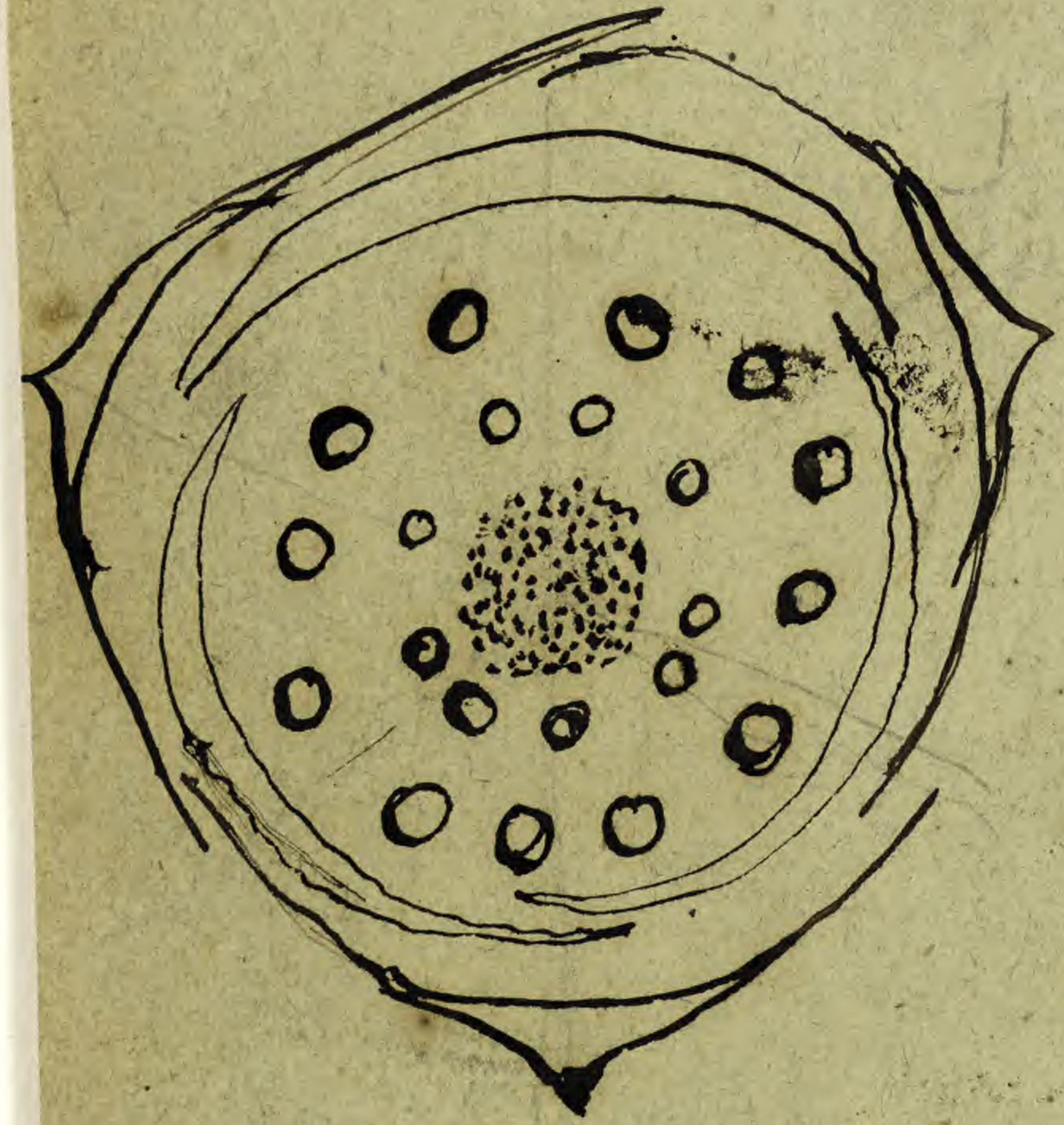


better

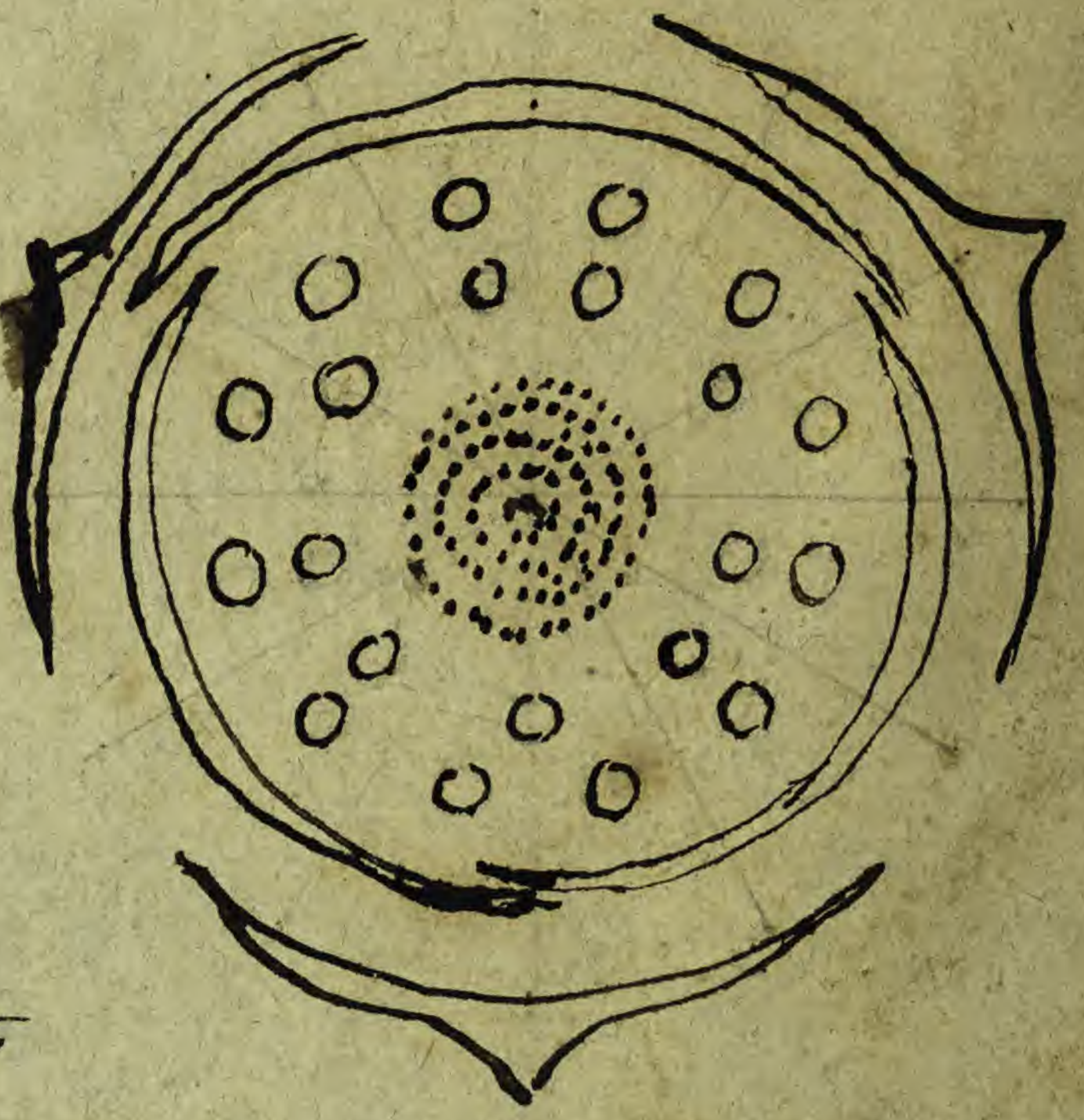
Alisma ~~ranunculoides~~
rostratum



12 outer stamens shorter
than the 9 inner ones



Alisma ~~sagittarioides~~ ~~repens~~
(radicans)
~~sagittaeoides~~



β. fruct. dorso carinato denticulato

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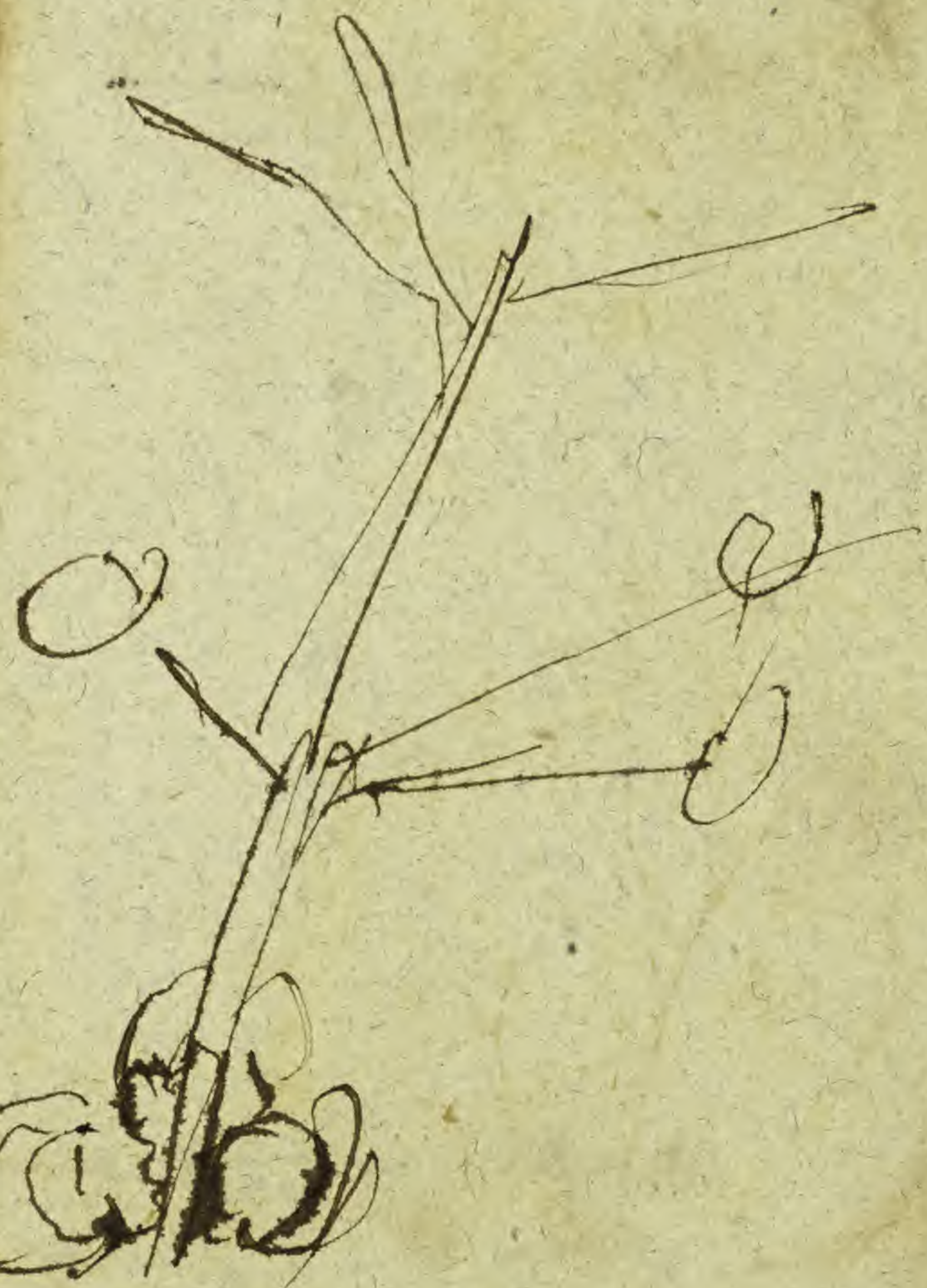

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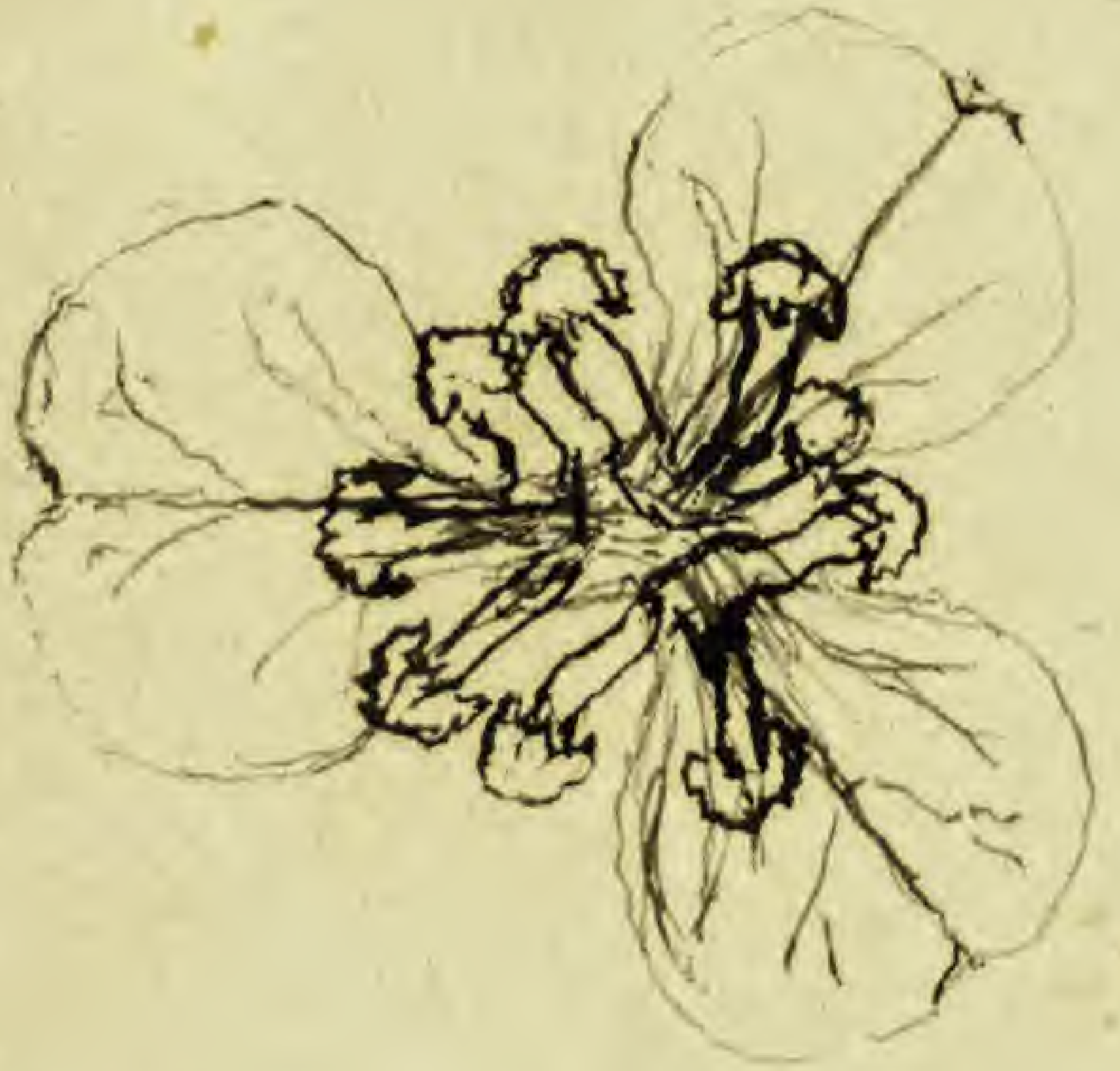
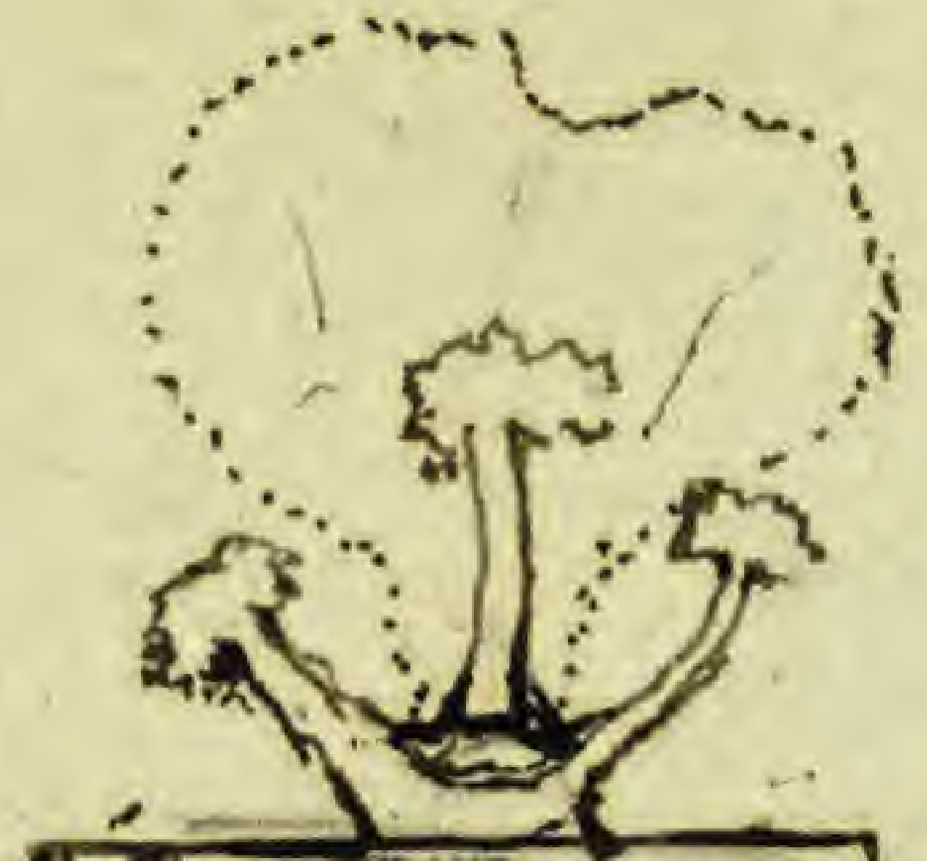
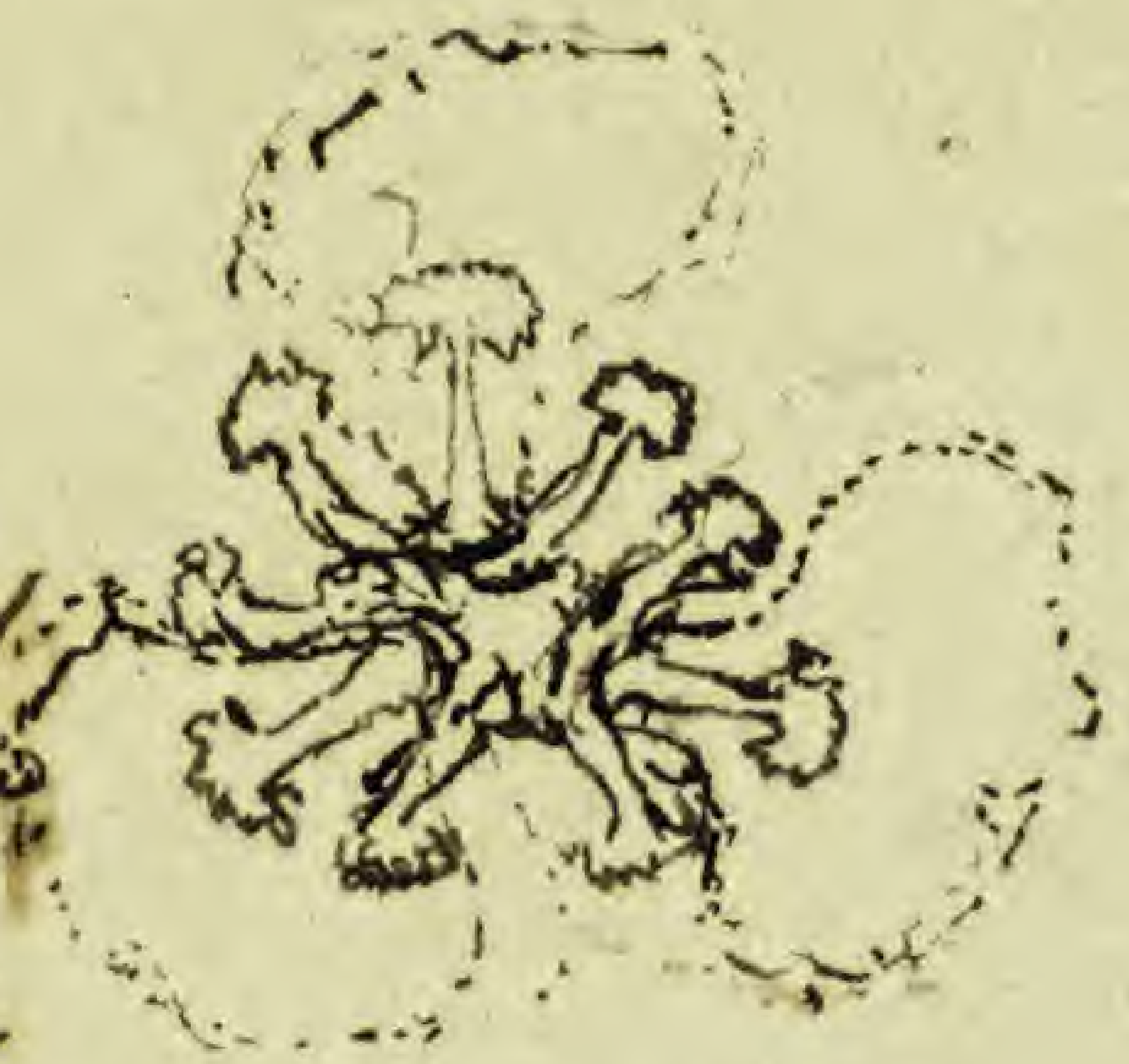
Echinodorus parvulus Cambridge T. P. James
1873





The filament in front of the petal stands on a little higher level than the 2 side ones opposite the sepals



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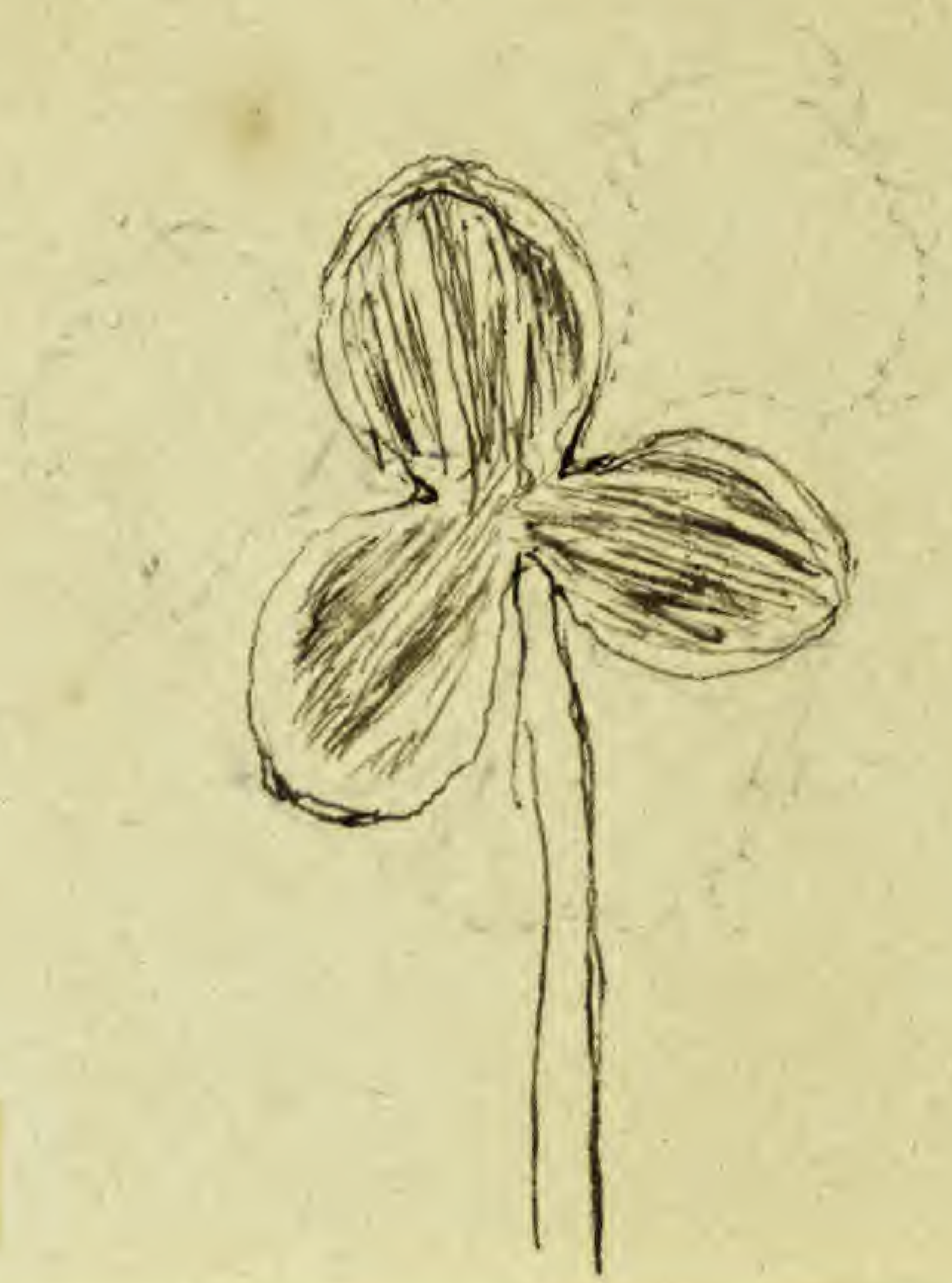
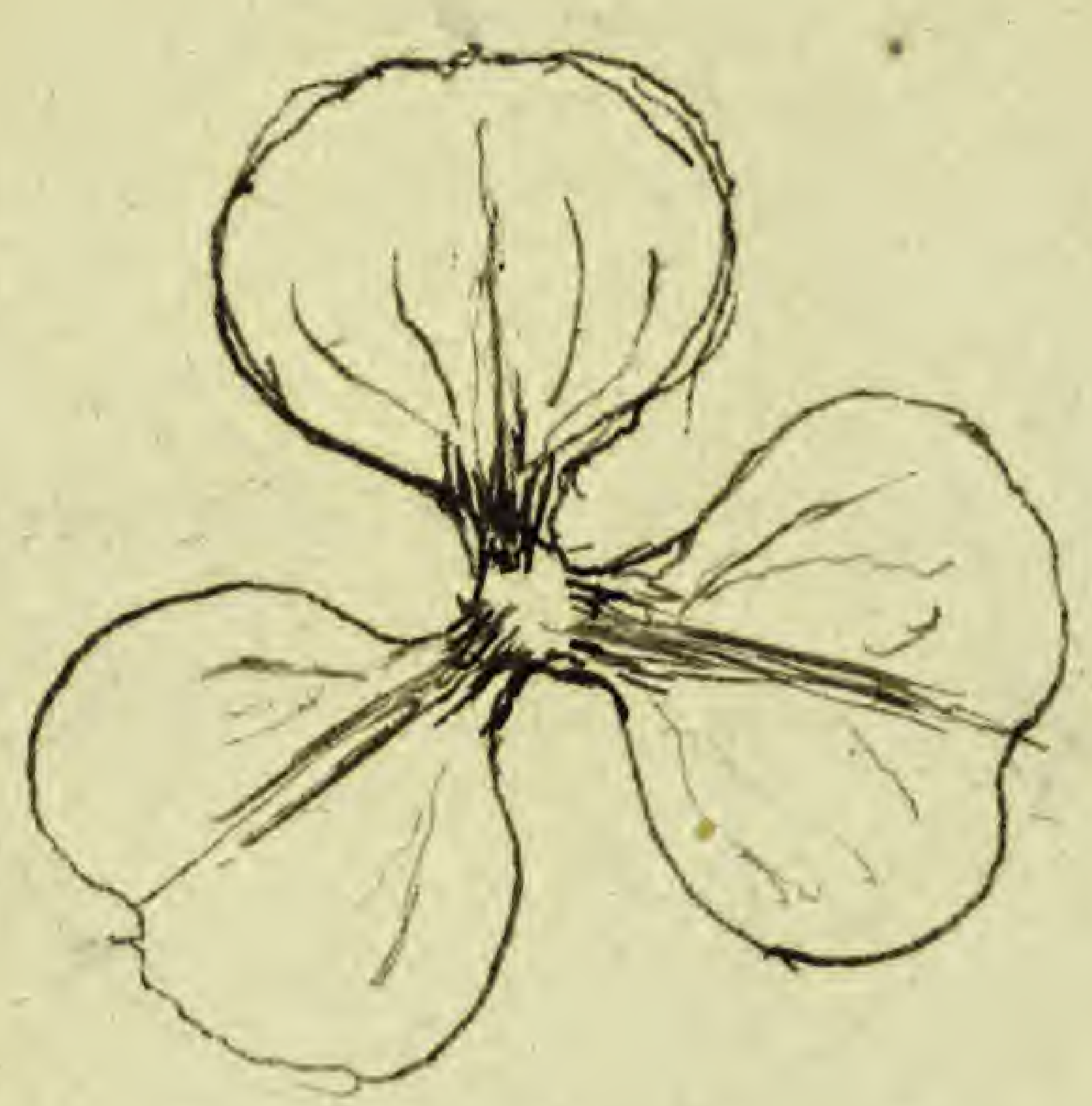
Ech. parvulus Cambridge T. P. James
1873





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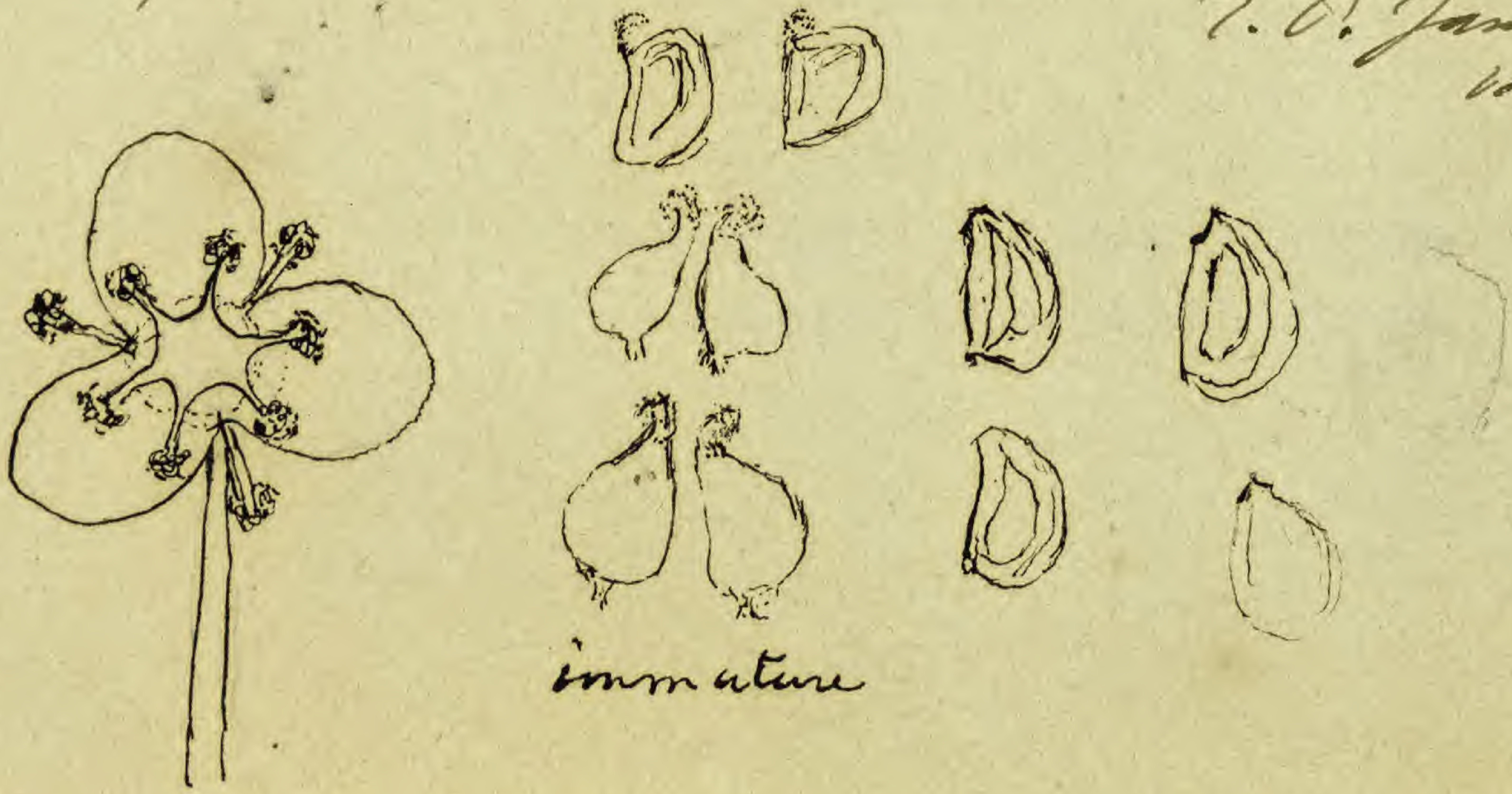
Echinodorus parvulus

Cambridge

T. P. James
1873



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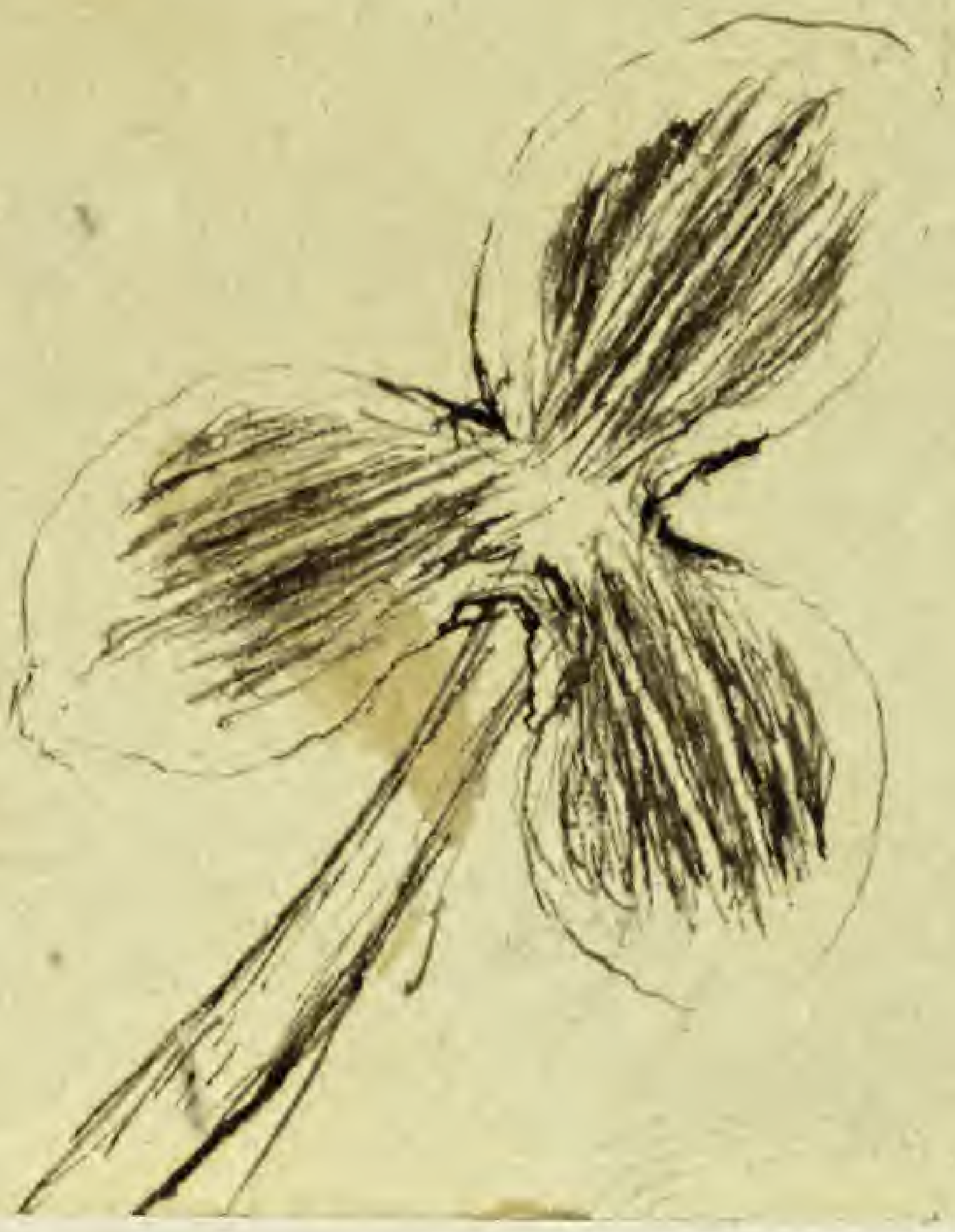
T. P. James



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